What Is My Adaptation?

Next Generation Science Standards:

- 3-LS3-1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
- 3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment.
- 3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

Hawai'i Content and Performance Standards III:

- SC.3.1.2 Safely collect and analyze data to answer a question.
- SC.3.3.1 Describe how plants depend on animals.
- SC.3.4.1 Compare distinct structures of living things that help them to survive.
- SC.3.5.1 Describe the relationship between structure and functions in organisms.

Description:
This lesson opens the adaptation unit with an introduction of key vocabulary words. It then introduces the concept of adaptation by having the students complete a worksheet that lists different plant and animal adaptations.

Duration: 45 minutes

Objectives: At the end of this lesson, the students will be able to:

- Describe how plants and animals use adaptations to survive in a particular environment.
- Explain how impacts on a habitat influence the adaptations of a species.

Background:
An adaptation is a change of form or behavior that helps a species survive in a specific environment. The trait or characteristic may be inherited from their parents. Other traits can result from individuals' interactions with their environment, which can range from diet to learning. Many characteristics involve both inheritance and the environment. Most living things have a variety of adaptations. Some examples are: body coloring or camouflage, variations in the size and shape of a bird's beak to help it gather food, migration, hibernation, and defense behaviors. All forms of life are dependent upon both living and nonliving components of the environment. The living and nonliving components of an ecosystem all interact with each other and are interdependent.

Vocabulary:
Adaptation: A change of form or behavior that helps a species survive in a specific environment.
Camouflage: Coloration or patterns that allow animals to blend into their surroundings.

Interdependence: Dependent or relying upon each other, the interrelationships of species with one another and with the various elements of their environment.
Migration: The act of moving from one place to another.
Species: Plant, animal or insect.
Trait: A distinguishing characteristic or quality that makes one species different from another.

Materials Needed:

What is My Adaptation Worksheet (2 sided, included)

Procedure:

Step 1: Introduction and Definitions

- Provide the guiding question: Why are there so many different types of animals and plants in the world? Record their ideas.
- Introduce key vocabulary words:
  - Adaptation = A change of form or behavior that helps a species survive in a specific environment.
  - Camouflage = Coloration or patterns that allow animals to blend into their surroundings.
  - Interdependence = Dependent or relying upon each other, the interrelationships of species with one another and with the various elements of their environment.
  - Migration = The act of moving from one place to another.
  - Species = Plant, animal or insect.
  - Trait = A distinguishing characteristic or quality that makes one species different from another.
- Discuss these key words, ask for examples and clarify misconceptions.
- Ask students for examples of some different types of plant and animal adaptations.
- Tell the students they will see some examples of amazing adaptations on their field trip to Haleakalā National Park.

Step 2: What is my Adaptation Worksheet

Tell your students they will be completing a worksheet to help them understand different types of adaptations. For each adaptation listed on the worksheet have students check the box if it applies to plants, animals, or humans. Also check the box if it helps the species survive. Go over the worksheet as a group and discuss specific examples of plants and animals that may have each adaptation.

Step 3: Check for Understanding

- Have students give specific examples of the variation of traits that are present in different species. For example ask for examples of how trees are different from each other.

- How do these differences help them to survive in different areas? = Leaves, root structure, tree size.
- Ask students for specific examples of how birds are different from each other? = Colors, beaks, songs.
- What if all birds were exactly the same?

Step 4: Connect to Haleakalā National Park

Brainstorm a list of different plants and animals they might see in Haleakalā National Park. Discuss and compare any adaptations identified from the worksheet to species they may find in Haleakalā National Park.

References: Adapted from Adaptations for Survival Lesson Plan (Shenandoah NP).

Name: _____

What is My Adaptation Worksheet

Traits	Plant	Animal	Human	Does it help me survive?
I have legs that help me run away from danger				
I communicate with my species by song				
I can help protect the plants and animals of our world				
I smell sweet to attract pollinating insects				
I can make my own food				
Thick bark protects my insides from damage caused by insects and other animals. It also helps keep me from drying out				
I can get water from a misty cloud				
Animals like to eat my fruit. They spread my seeds in their droppings				
My seeds are protected by a hard covering				

Trait	Plant	Animal	Human	Does it help me survive?
I migrate away from Maui during my life				
I use camouflage to protect myself				
I have hair to protect me from the bright sun				
I need clean water and air				
Roots help to hold me up				
My instinct is to hide from predators				
My beak fits perfectly into flowers				
I can grow a native plant				
I am curved so I can help feed birds with curved beaks				